

REMARKS

I. Status and Disposition of the Claims

Claims 1-23, 27, 32-35, 38-40, 46, 63-65, 80-86, 90 and 91 are pending and stand rejected. Claims 24, 25, 26, 28, 29, 30, 31, 36 and 37 are canceled herein without prejudice or disclaimer. Written description support for the amendment to claims 1, 87, 92 and 93 can be found, for example, in paragraph [069] of the as-filed disclosure. Claim 40 is amended to correct minor typographical errors.

II. Rejection of Claims under § 103(a)

The Office rejects claims 1-40, 46, 63-65, 80-86, and 90-91 as “unpatentable over” the combination of U.S. Patent No. 6,113,881 to Bhatt et al. (“Bhatt”), U.S. Patent No. 5,527,840 to Chutko et al. (“Chutko”), and U.S. Patent No. 5,807,937 to Matyjaszewski et al. (“Matyjaszewski”) for the reasons set forth at pages 2-4 of the Office Action. Applicant continues to disagree with the Office's position for at least the reasons of record and those set forth below.

Bhatt discloses hair styling mouse compositions comprising polyurethane resins. As admitted by the Office, Bhatt does not disclose a composition comprising a copolymer of (meth)acrylic acid, styrene and alkyl acrylate. Nor does Bhatt disclose a composition comprising a gradient copolymer. Further, Bhatt does not disclose a need, desire or means to control the arrangement of the monomer residues within the polymer chain in any way. Thus, Bhatt does not provide any motivation for the use of gradient copolymers of any type in hair cosmetic compositions.

Chutko does not remedy these failings of Bhatt. Although Chutko discloses a composition comprising a copolymer containing acrylic acid, styrene and ethyl acrylate, it does not disclose a gradient copolymer containing those monomer residues. Moreover, Chutko does not disclose a copolymer of any type containing from 5 to 25 percent by weight of a first monomeric residue, from 5 to 25 percent by weight of a second monomeric residue and from 50 to 90 percent by weight of a third monomeric residue, as recited in claim 1, as amended herein.

Instead, Chutko discloses a carboxy addition polymer containing 55.7% acrylic acid, 25.7% styrene and 18.6% ethyl acrylate. Col. 11, Table I, carboxy addition polymer D. Modifying the amount of the monomer components in that polymer, synthesizing it via the methods of Matyjaszewski, and applying the polymer to the compositions of Bhatt to arrive at the present claims would not have been obvious to one of skill in the art at the time of invention for at least the following reasons.

As described in detail below, the art of gradient copolymers was unknown and unpredictable at the time of invention. See Matyjaszewski at col. 29 Ins. 29-48. One of skill in the art, therefore, would have had no basis to predict the physical properties of a polymer, including the film forming properties of a polymer, created by modifying the carboxy addition polymer D of Chutko in order to arrive at a gradient copolymer containing from 5 to 25 percent by weight of a first monomeric residue, from 5 to 25 percent by weight of a second monomeric residue and from 50 to 90 percent by weight of a third monomeric residue, as recited in claim 1, as amended herein. Thus, the skilled artisan would have had no reasonable expectation of success in modifying Bhatt with Chutko and Matyjaszewski in order to arrive at the presently claimed invention.

Finally, Matyjaszewski discloses various polymers synthesized via atom transfer radical polymerization methods, including gradient copolymers. However, Matyjaszewski does not disclose a gradient copolymer containing (meth)acrylic acid, styrene and alkyl acrylate, nor does it disclose a gradient copolymer containing from 5 to 25 percent by weight of a first monomeric residue, from 5 to 25 percent by weight of a second monomeric residue and from 50 to 90 percent by weight of a third monomeric residue.

Instead, Matyjaszewski discloses, among other things, a gradient copolymer of methyl acrylate and methyl methacrylate, a gradient copolymer of styrene and methyl methacrylate, a gradient copolymer of methyl acrylate and methyl methacrylate, and a gradient copolymer of methyl acrylate and styrene. See Examples , 16-20, col. 47, ln. 50-col. 49, ln. 30. All of these gradient copolymers contain only two monomer residues. The synthesis of a polymer similar to that disclosed in Chutko with the methods of Matyjaszewski and applied to the compositions of Bhatt in order to arrive at the present claims would not have been obvious to one of skill in the art for the following reasons.

Regarding gradient copolymers, Matyjaszewski expressly teaches that the properties of those materials were unknown and unpredictable. Specifically, Matyjaszewski states that gradient copolymers “form an entirely new class of polymers . . . expected to have very unique thermal properties (e.g., glass transition temperatures and/or melting points.) They may also exhibit unprecedented phase separation and uncommon mechanical behavior.” Col. 29 Ins. 29-40. Additionally, Matyjaszewski states that “[t]o date, there are no publications on the subject of gradient copolymers.” col. 29 Ins. 47-48. Matyjaszewski never discusses the properties of any specific

gradient copolymer, nor does it attempt to form a film from a composition comprising a gradient copolymer.

Thus, if one were to modify a conventional polymer with known properties with the teachings of Matyjaszewski in order to arrive at a gradient polymer of similar monomer constituency, the properties of that gradient polymer would be unknown. Accordingly, a skilled artisan at the time of invention would have had no reasonable expectation for success in modifying Bhatt and Chutko with the teachings of Matyjaszewski in order to arrive at a hair cosmetic composition comprising a gradient copolymer containing from 5 to 25 percent by weight of a first monomeric residue, from 5 to 25 percent by weight of a second monomeric residue and from 50 to 90 percent by weight of a third monomeric residue.

Thus, none of the references cited by the Office, either alone or in combination, discloses a hair-cosmetic composition comprising, in a cosmetically acceptable medium, at least one film-forming gradient copolymer containing from 5 to 25 percent by weight of a first monomeric residue, from 5 to 25 percent by weight of a second monomeric residue and from 50 to 90 percent by weight of a third monomeric residue. Applicant respectfully requests that the rejection be withdrawn.

Applicant, therefore, respectfully requests that this Amendment under 37 C.F.R. § 1.116 be entered by the Examiner, placing claims 1-23, 27, 32-35, 38-40, 46, 63-65, 80-86, 90 and 91 in condition for allowance. Applicant submits that the proposed amendment of claim 1 does not raise new issues or necessitate the undertaking of any additional search of the art by the Examiner, since all of the elements and their

relationships claimed were either earlier claimed or inherent in the claims as examined.

Therefore, this Amendment should allow for immediate action by the Examiner.

Finally, Applicant submits that the entry of the amendment would place the application in better form for appeal, should the Examiner dispute the patentability of the pending claims.

Respectfully submitted,

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Dated: May 29, 2009

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